

SCIENCE AND TECHNOLOGY CHARTS

size 58 × 90 cm (In English only)

The charts aim at familiarising students with the subject in a very realistic way and in social context. These delineate the process of life and of the technology that conditions our world today. The students will come to know the intricacies of the phenomenon and how it can be best used for the benefit of mankind. Using the latest printing technology the charts are printed on art paper in full colours and are duly laminated on both sides with thick plastic film and are fitted with plastic rollers.

BIOLOGY

- ST001 Typical Plant
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 - ST003 Plant Cell Mitosis
 - ST004 Plant Cell Meiosis
 - ST005 Plant Tissues
 - ST006 Types of Leaves
 - ST007 Life History of Frog
 - ST008 Malaria Parasite
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 - ST010 Animal Kingdom
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 - ST017 Animal Cell Meiosis
 - ST018 Animal Cell Mitosis
- Price Rs. 175.00 each

Plant Cell Mitosis

Mitosis is a kind of cell division in which the chromosomes are duplicated and distributed equally to the daughter cells. It occurs in somatic cells.

- 1. Prophase**
The nucleus, containing the chromosomes, becomes visible. The nuclear envelope and nucleolus break down. The spindle fibers begin to form.
- 2. Metaphase**
The chromosomes align themselves in a straight line in the center of the cell, forming the metaphase plate.
- 3. Anaphase**
The sister chromatids separate and move toward opposite poles of the cell.
- 4. Telophase**
The chromosomes reach the poles and new nuclear envelopes form around them. The spindle fibers disappear.

4.5 Prokaryotes
Prokaryotes undergo binary fission. The DNA replicates and the cell divides into two daughter cells.

5. Meiosis
Meiosis is a type of cell division that results in four daughter cells, each with half the number of chromosomes as the parent cell.

Types of Leaves

Leaves are the green parts of a plant that are used for photosynthesis. They are attached to the stem by a petiole.

Simple Leaves
A leaf with a single blade is called a simple leaf.

Compound Leaves
A leaf with more than one leaflet is called a compound leaf.

Phyllotaxy
The arrangement of leaves on the stem is called phyllotaxy.

Opposite Type
Leaves are arranged alternately on opposite sides of the stem.

Whorled Type
Leaves are arranged in a whorl at the nodes of the stem.

Leaf Venation
The pattern of veins in a leaf is called leaf venation. It can be pinnate or palmate.

Stomata
Small openings on the surface of leaves through which gases enter and leave the plant.

Transpiration
The loss of water vapor from the leaves of a plant is called transpiration.

Malaria Parasite

The life cycle of the malaria parasite, plasmodium, takes place in two hosts - an anopheline mosquito and a human being.

SCHIZOGONY IN MAN

SPOROZOYTES IN MOSQUITO

Human Host: Sporozoites injected by a mosquito enter the liver, then the bloodstream, and infect red blood cells. They multiply and cause the cells to burst, releasing merozoites.

Mosquito Host: A mosquito ingests merozoites during a blood meal. They develop in the midgut, penetrate the gut wall, and travel to the body cavity. Some develop into gametocytes, which can be taken up by another mosquito during the next blood meal.

Amoeba

Amoeba is one of the simplest living animals. It is a single cell and is capable of performing all the functions of life.

Cell Structure: Amoeba has a cell membrane, cytoplasm, and a nucleus. It lacks a cell wall and a large central vacuole.

Reproduction: Amoeba reproduces asexually by binary fission. The nucleus divides, and the cell splits into two daughter cells.

Nutrition: Amoeba feeds by phagocytosis. It engulfs food particles and digests them in a food vacuole.

Animal Kingdom

Animals are classified into several phyla on the basis of their levels of cell organisation and presence or absence of a body cavity.

Phylum Porifera: Simplest animals with no definite body plan.

Phylum Coelenterata: Radially symmetrical animals with a gastrovascular cavity.

Phylum Mollusca: Soft-bodied animals, many with shells.

Phylum Arthropoda: Jointed legs and segmented bodies.

Phylum Chordata: Animals with a notochord and a dorsal nerve cord.

Phylum Echinodermata: Radially symmetrical animals with a hard skeleton.

Phylum Platyhelminthes: Flatworms with no body cavity.

Phylum Nematoda: Roundworms with a body cavity.

Phylum Annelida: Segmented worms with a body cavity.

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